

# Dejian Fu

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Scientist

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## Education

- Ph.D. in Atmospheric Chemistry, June 2007, University of Waterloo, Ontario, Canada  
Supervisor: Professor Peter F. Bernath  
Thesis: Observations of atmospheric gases using Fourier transform spectrometers  
Courses taken: Atmospheric Remote Sensing, Spectroscopy, Atmospheric Chemistry and Physics, *etc.*
- M.Sc. in Geography, July 2003, East China Normal University, Shanghai, China  
Supervisor: Professor Jianrong Zhu  
Thesis: 3D numerical experiments for the study of transportations of suspended sediments in estuaries  
Courses taken: Remote Sensing on Resources and Environment, Fluid Mechanics, Progress on Environmental Science, Instrument Analysis and Measurement Technology, etc.
- B.Eng. in Physics, July 2000, East China Normal University, Shanghai, China

## Professional Experience

- 2010–present: Scientist, Jet Propulsion Laboratory  
2008–2010: Postdoctoral Scholar, Joint Institute for Regional Earth System Science and Engineering (UCLA and JPL)  
2007–2008: Post Doctoral Scholar, University of Waterloo  
2003–2007: Graduate research and Teaching Assistant, University of Waterloo  
2000–2003: Graduate research, East China Normal University

## Refereed Publications

1. **Fu D.**, Worden J.R., Liu X., Kulawik S.S., Bowman K.W., Natraj V., “Characterization of Ozone Profiles Derived from Aura TES and OMI Radiances”, *Atmos. Chem. Phys.*, 13, 3,445 – 3,462, 2013.
2. **Fu D.**, Pongetti T.J., Blavier J-F L., Crawford T.J., Manatt K.S., Toon G.C., Wong C., Sander S.P., “Near-Infrared Remote Sensing of Los Angeles Trace Gas Distributions from a Mountaintop Site”, 6, 8807 – 8854, *Atmos. Meas. Tech. Discussion*, 2013.
3. Worden H.M., Edwards D.P., Deeter M.N., **Fu D.**, Kulawik S.S., Worden J.R., Arellano A., “Averaging kernel prediction from atmospheric and surface state parameters based on multiple regression for nadir-viewing satellite measurements of carbon monoxide and ozone”, *Atmos. Meas. Tech.*, 6, 1,633 – 1,646, 2013.
4. Bekker D.L., Blavier J.L., **Fu D.**, Key R.W., Manatt K.S., McKinney C., Rider D.M., Sander S.P., Werne T.A., Wu A.C., Wu Y.H., “Command and data handling system for the panchromatic Fourier transform spectrometer”, *Aerospace Conference, IEEE*, 1 – 10, 2012.

5. **Fu D.**, Bernath P.F., Sung K., Walker K.A., Strong K., Mittermeier R. and Fast H., “Simultaneous Atmospheric remote sensing using Fourier transform infrared spectrometers at Polar Environment Atmospheric Research Laboratory (PEARL) during Spring 2006”, *Atmos. Chem. Phys.* 11, 5,383 – 5,405, 2011.
6. **Fu D.**, Boone C.D., Bernath P.F., Weisenstein D.K., Rinsland C.P., Manney G.L. and Walker K.A., “First global observations of atmospheric COClF from the Atmospheric Chemistry Experiment mission”, *J. Quant. Spectrosc. Rad. Trans.* 110, 974 – 985, 2009.
7. **Fu D.**, Sung K., Boone C.D., Walker K.A., and Bernath P.F., “Ground-based solar absorption studies for the Carbon Cycle science by Fourier Transform Spectroscopy (CC-FTS)”, *J. Quant. Spectrosc. Rad. Trans.*, doi:10.1016/j.jqsrt.2008.02.003, 2008.
8. **Fu D.**, Boone C.D., Bernath P.F., Walker K.A., Nassar R., Manney G.L. and McLeod S.D., “Global phosgene observations from the Atmospheric Chemistry Experiment (ACE) mission”, *Geophys. Res. Lett.* 34, L17815, doi:10.1029/2007GL029942, 2007.
9. **Fu D.**, Walker K.A., Sung K., Boone C.D., Soucy M.-A. and Bernath P.F., “The Portable Atmospheric Research Interferometric Spectrometer for the Infrared, PARIS-IR”, *J. Quant. Spectrosc. Rad. Trans.* 103, 362 – 370, 2007.
10. Fraser A., Bernath P.F., Blatherwick R.D., Drummond J.R., Fogal P.F., Fu D., Goutail F., Kerzenmacher T.E., McElroy C.T., Midwinter C., Olson J. R., Strong K., Walker K.A., Wunch D., and Young I.J., “Intercomparison of ground-based ozone and NO<sub>2</sub> measurements during the MANTRA 2004 campaign”, *Atmos. Chem. Phys.* 7, 5,489 – 5,499, 2007.
11. Sung K., Skelton R., Walker K.A., Boone C.D., **Fu D.**, Bernath P.F., “N<sub>2</sub>O and O<sub>3</sub> Arctic Column Amounts from PARIS-IR Observations: Retrievals, Characterization and Error Analysis”, *J. Quant. Spectrosc. Rad. Trans.*, 107, 385 – 406, 2007.
12. Wunch D., Taylor J., **Fu D.**, Bernath P.F., Drummond J.R., etc, “Simutaneous ground-based observations of O<sub>3</sub>, HCl, N<sub>2</sub>O and CH<sub>4</sub> over Toronto using three Fourier transform spectrometers with different resolutions”, *Atmos. Chem. Phys.* 7, 1,275 – 1,292, 2006.
13. Kerzenmacher et al., “Results from the Canadian Arctic Validation of ACE Campaigns from 2004 to 2006”, European Space Agency Science Conference in Frascati, Italy, 2006.
14. Yu S., **Fu D.**, Shayesteh A., Gordon I.E., Appadoo D.R.T. and Bernath P.F., “Infrared and near infrared emission spectra of SbH and SbD”, *J. Mol. Spectrosc.* 229, 257 – 265, 2005.
15. Yu S., Shayesteh A., **Fu D.**, and Bernath P.F., “The vibration-rotation emission spectrum of gaseous HZnCl”, *J.Phys. Chem. A*, 109, 4,092 – 4,094, 2005.
16. Yu S., Shayesteh A., **Fu D.**, and Bernath P.F., “Infrared and near infrared emission spectra of TeH and TeD”, *J. Mol. Spectrosc.* 230, 105 – 116, 2005.
17. **Fu D.**, Zhu J., Shen H., “The effects from the shapes of river mouth on the formation of the turbidity maximum zone”, *J. East China Normal University (Nature Science)*, 4, 72 – 78, 2004.
18. Zhu J., **Fu D.**, Wu H. and Qi D., “Dynamical model and numerical experiments on the formation cause of the turbidity maximum zone”, *Ocean Engineering*, 22, 83 – 90, 2004.

19. Zhu J. and **Fu D.**, “Open boundary condition considered residual current and tidal current simultaneously in ocean model”, Journal of East China Normal University (Nature Science), 1, 81 – 85, 2003.

## Conference Oral Presentations

12. **Fu D.**, Huang M., John Worden J.R., Neu J.L., Bowman K.W., Liu X., Kulawik S.S., Natraj V., “Near surface ozone observation using combined thermal infrared and ultraviolet channels on Aura satellite”, Atmospheric Infrared Sounder Spring 2013 Science Team Meeting, Pasadena, May 21<sup>st</sup> – 22<sup>nd</sup>, 2013.
11. **Fu D.**, Worden J.R., Kulawik S.S., Bowman K.W., Liu X., Natraj V., “Near Surface Ozone Measurements Using Combined TIR and UV Channels on Aura Satellite”, TES Science Team Meeting, Boston, USA, March 18th to 20th, 2013.
10. **Fu D.**, Worden J.R., Liu X., Kulawik S.S., Bowman K.W., Natraj V., “Near surface ozone observation from Aura satellite using multispectral (TIR and UV) retrievals”, American Geophysical Union Fall Meeting, San Francisco, USA, December 3<sup>rd</sup> – 7<sup>th</sup>, 2012.
9. **Fu D.**, Worden J.R., Liu X., Kulawik S.S., Bowman K.W., Natraj V., Chance K., “Near surface ozone observation from Aura satellite using multispectral (TIR and UV) retrievals”, Pasadena, USA, Aura Science Team Meeting, October 1<sup>st</sup> – 3<sup>rd</sup>, 2012.
8. **Fu D.**, Worden J., Kulawik S., Liu X., Bowman K., Sander S.P., “Combining simultaneously measured UV and IR radiances from OMI and TES to improve tropospheric ozone profile retrievals”, Geostationary Coastal and Air Pollution Events (GEO-CAPE) mission Community Workshop, May 11<sup>th</sup> – 13<sup>th</sup>, 2011, Boulder, Colorado, USA.
7. **Fu D.**, Pongetti T.J., Sander S.P., Cheung R., Stutz J., Park C., Li Q., “Remote Sensing of Spatial Distributions of Greenhouse Gases in the Los Angles Basin”, American Geophysical Union Fall Meeting, December 13<sup>th</sup> – 17<sup>th</sup>, 2010, San Francisco, California, USA.
6. **Fu D.**, Boone C.D., Bernath P.F., McLeod S.D., and Walker K.A., “Retrieval of atmospheric winds measured by the Atmospheric Chemistry Experiment Fourier Transform Spectrometer”, 42<sup>nd</sup> Canadian Meteorological and Oceanographic Society, Kelowna, British Columbia, Canada, May 25<sup>th</sup> – May 29<sup>th</sup>, 2008.
5. **Fu D.**, Sung K., Boone C.D., Walker K.A., and Bernath P.F., “Ground-based solar absorption studies for the Carbon Cycle science by Fourier Transform Spectroscopy (CC-FTS)”, 62<sup>nd</sup> Ohio State University International Symposium on Molecular Spectroscopy, Columbus, Ohio, USA, June 18<sup>th</sup> – 22<sup>nd</sup>, 2007.
4. **Fu D.**, Boone C.D., Bernath P.F., Walker K.A., Nassar R., Manney G.L. and Mcleod S.D., “Global phosgene observations from the Atmospheric Chemistry Experiment (ACE) mission”, 62<sup>nd</sup> Ohio State University International Symposium on Molecular Spectroscopy, Columbus, Ohio, USA, June 18<sup>th</sup> – 22<sup>nd</sup>, 2007.
3. **Fu D.** and P.F. Bernath, “Remote sensing of atmospheric trace gases using PARIS-IR”, ABB 2006 Workshop on Infrared Remote Sensing Application (WIRSA), Quebec city, Quebec, Canada, November 11<sup>th</sup> – 13<sup>th</sup>, 2006.

2. **Fu D.**, Walker K.A., Sung K., Boone C.D., and Bernath P.F., "Spectroscopic study of atmospheric trace gases using PARIS-IR from Waterloo Atmospheric Observatory in 2005 and 2006", 61<sup>st</sup> Ohio State University International Symposium on Molecular Spectroscopy, Columbus, Ohio, USA, June 18<sup>th</sup> – 23<sup>rd</sup>, 2006.
1. **Fu D.**, Walker K.A., Sung K., Boone C.D., Mcleod S.D., and Bernath, P.F., "Comparisons of ACE-FTS and PARIS-IR and Measurements of several Trace Gases in the Northern Mid-latitude Atmosphere", 60<sup>th</sup> Ohio State University International Symposium on Molecular Spectroscopy, Columbus, Ohio, USA, June 20<sup>th</sup> – 24<sup>th</sup>, 2005.

## Honors and Awards

- Bruker BioSpin Graduate Scholarship, Chemistry Department, University of Waterloo, April 2007
- Award for student poster competition, the Optical Society of America poster night (Southwestern Ontario Section), Waterloo, Ontario, Canada, March 2005
- International Doctoral Student Award, University of Waterloo, September 2003 – August 2006
- Graduate Scholarship, University of Waterloo, September 2003 – 2007
- University of Waterloo Entrance Scholarship, University of Waterloo, September 2003